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POWER SUPPLIES

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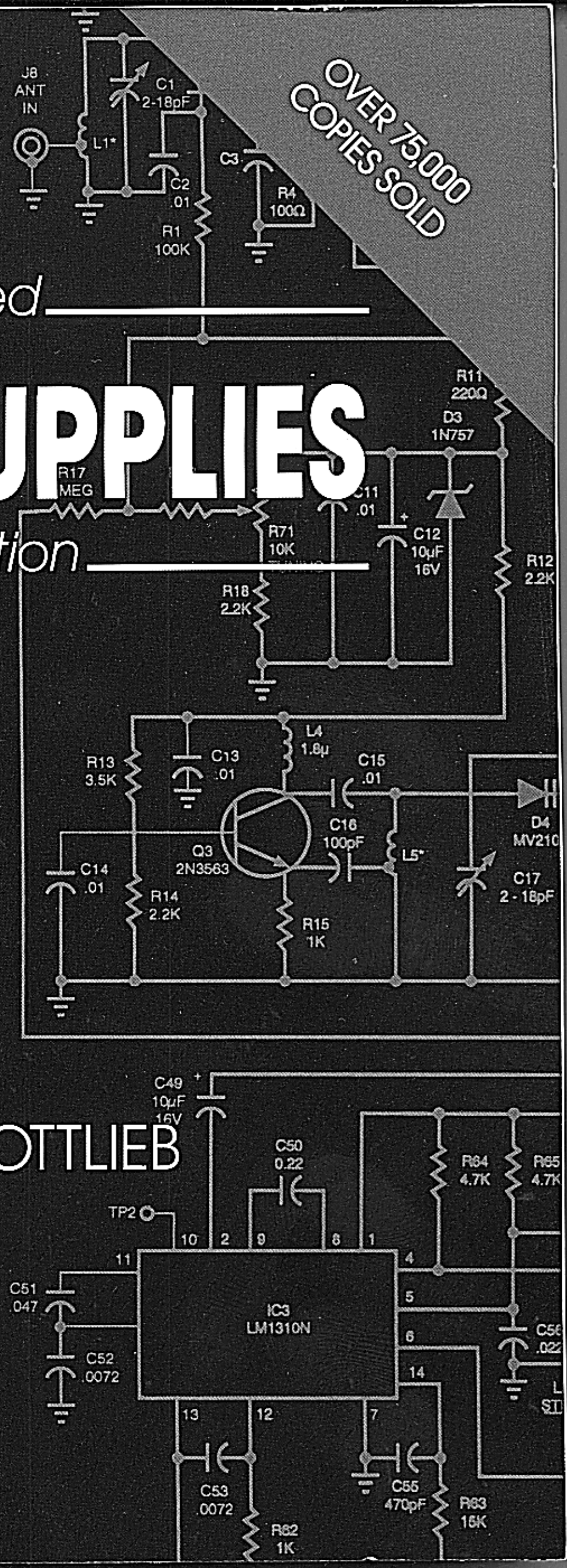

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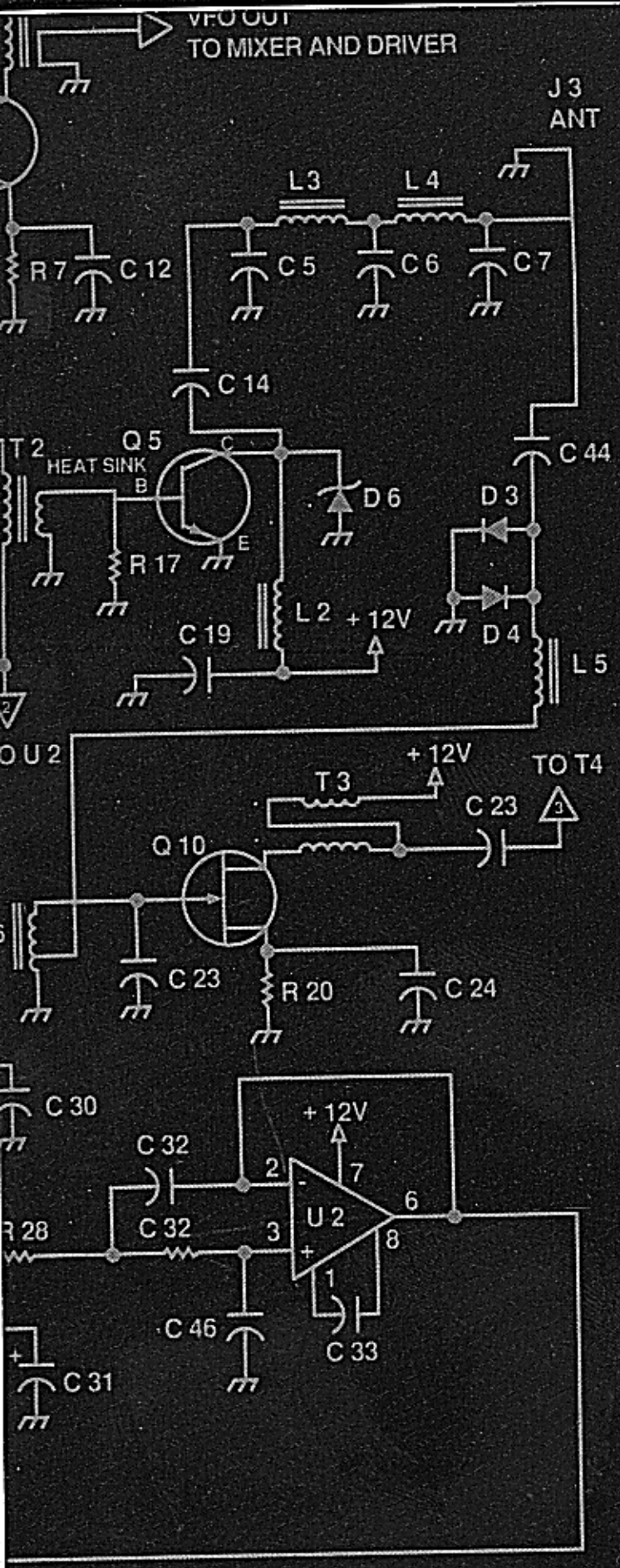

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Reviews of Gottlieb's *Power Control with Solid-State Devices:*

"An excellent sourcebook . . . It provides an overview that is neither overly theoretical nor too simplified."
—SciTech Book News

". . . a valuable addition to the library of the control engineer. Both designers of electrical/electronic controls and users of electronic power devices will find it useful."
—Control Engineering

Regulated power supplies play a vital role in electronic circuits and systems—they provide the constant voltages needed for many modern solid-state devices. Now in its fourth edition, this classic reference has been completely updated and expanded to include the latest information on all types of regulated power supplies.

In a technically precise style, Irving Gottlieb describes regulation techniques, static and dynamic characteristics, and the components used in both the "older" types of switching power supplies and the newer state-of-the-art regulated supplies. ***Regulated Power Supplies—4th Edition*** also contains:

- A detailed discussion of the circuitry and operation of the latest solid-state regulators
- Numerous circuits designed to fit almost any application
- Linear and switching type circuits

You'll find fast answers to any questions you might have—all you need to do is consult the index and refer to the chapter or section covering the topic that interests you. Whether you're an engineer, technician, or hobbyist, the thoroughly practical guidance contained in this information-packed volume is certain to prove invaluable for all aspects of building and using regulated power supplies.

Irving M. Gottlieb has been an electrical engineer for more than 35 years. He is the author of 25 books, including TAB/McGraw-Hill's *Electronic Power Control* and *Design and Build Electronic Power Supplies.*

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Introduction

The dominant theme of the previous three editions of *Regulated Power Supplies* had been response to the notion that the power supply was little more than an unfortunate, but nonetheless necessary appendage to electronic circuits and systems. In demonstrating the truly significant role that is played by power supplies, it became all too obvious that the power supply had to be recognized as much more than simply the source of dc power to the load; indeed, the long-enduring concept that the power supply and its empowered load were separate and independent entities had to be put to its overdue rest. The intimate linkage between circuit performance and the nature of its dc source paved the way for the development and use of the regulated power supply.

This fourth edition of this title fully accepts this evolutionary process of design, taking for granted the now-universal use of regulated power supplies. Now it is important to be prepared to further refine the proven techniques of regulation. This is composed of new ways to achieve regulation, the extension of identifiable trends, such as the use of ever-higher switching rates, the deployment of newer control ICs and power switches, improved system philosophies, and last but not least, more sophisticated "bells and whistles."

Interestingly, the newer state-of-the-art regulated power supplies do not necessarily make the previously used regulators obsolete; instead, we now have a much wider range of options from which to choose. This is because many applications do not require utmost consideration be bestowed on size, weight, operation frequency, efficiency, or even on inordinately tight regulation. Accordingly, it is fitting that this fourth edition of *Regulated Power Supplies* should expand the art as depicted in previous editions to include more recently developed practices.

This book on the intriguing subject of regulated power supplies has been written to reflect the manner in which a design engineer might hold an informal discussion with another technically versed person. Thus, the reader will be conveniently

able to extract useful information without being "snowed" by forbidding mathematics; at the same time, resort to the simplistic has not been for the sole purpose of making the text easily digestible. To avoid these extremist editorial formats, the emphasis has been on the readable presentation of practically useful material.

Accordingly, it is of the reader's best interest to use this work as practical guide for designing, operating, building, and repairing regulated power supplies. It is, indeed, for this purpose that much focus has been directed to basic theory and to principles of operation. The intent is to provide essential insights and to sharpen the intuition. Thus, both the time-proven and the very recently developed devices and circuit techniques share space in the pages ahead.

Although educational purposes can best be served by sequentially reading the chapters, please relax and follow your individual inclinations and needs; no regimented procedure is mandatory—just consult the index and refer to the chapter or section that deals with the topic of interest at the moment. With just a bit of luck, you might find the specific answer to your unique problem. If such luck, however, is not the order of the day, good fortune will not have eluded you—you should prosper nonetheless via enhanced intuition and stimulated creativity.

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